

# **STIC Search Report**

## **Biotech-Chem Library**

**STIC Database Tracking Number: 134556**

**TO: Ralph J Gitomer  
Location: 3d65 / 3e71  
Art Unit: 1651  
Thursday, October 07, 2004**

**Case Serial Number: 09/857433**

**From: Noble Jarrell  
Location: Biotech-Chem Library  
Rem 1B71  
Phone: 272-2556**

**Noble.jarrell@uspto.gov**

### **Search Notes**

=> b reg

FILE 'REGISTRY' ENTERED AT 09:13:47 ON 07 OCT 2004  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
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Property values tagged with IC are from the ZIC/VINITI data file  
provided by InfoChem.

STRUCTURE FILE UPDATES: 5 OCT 2004 HIGHEST RN 757166-57-7  
DICTIONARY FILE UPDATES: 5 OCT 2004 HIGHEST RN 757166-57-7

TSCA INFORMATION NOW CURRENT THROUGH MAY 21, 2004

Please note that search-term pricing does apply when  
conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more  
information enter HELP PROP at an arrow prompt in the file or refer  
to the file summary sheet on the web at:  
<http://www.cas.org/ONLINE/DBSS/registryss.html>

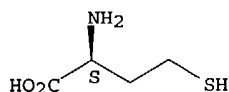
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L17 ANSWER 1 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 756484-33-0 REGISTRY  
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FS STEREOSEARCH  
MF C4 H9 N O2 S . C2 H F3 O2  
SR CA  
LC STN Files: CAPLUS  
DT.CA Caplus document type: Journal  
RL.NP Roles from non-patents: PREP (Preparation)

CM 1

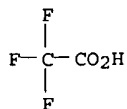
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CMF C4 H9 N O2 S

Absolute stereochemistry.



CM 2

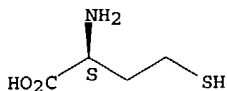
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1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L17 ANSWER 2 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 454679-15-3 REGISTRY  
CN L-Homocysteine, monohydrate (9CI) (CA INDEX NAME)  
FS STEREOSEARCH  
MF C4 H9 N O2 S . H2 O  
SR CA  
LC STN Files: CA, CAPLUS, USPATFULL  
DT.CA Caplus document type: Patent  
RL.P Roles from patents: BIOL (Biological study); USES (Uses)  
CRN (6027-13-0)

Absolute stereochemistry.

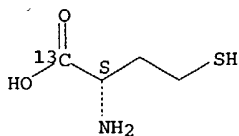


● H<sub>2</sub>O

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L17 ANSWER 3 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 249509-57-7 REGISTRY  
CN L-Homocysteine-1-13C (9CI) (CA INDEX NAME)  
FS STEREOSEARCH  
MF C4 H9 N O2 S  
SR CA  
LC STN Files: CA, CAPLUS  
DT.CA Caplus document type: Journal  
RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); RACT (Reactant or reagent); USES (Uses)

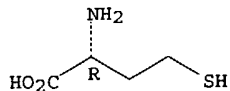
Absolute stereochemistry.



2 REFERENCES IN FILE CA (1907 TO DATE)  
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L17 ANSWER 4 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 221040-52-4 REGISTRY  
CN D-Homocysteine, hydrochloride (9CI) (CA INDEX NAME)  
FS STEREOSEARCH  
MF C4 H9 N O2 S . Cl H  
SR CA  
LC STN Files: CA, CAPLUS  
DT.CA Caplus document type: Journal  
RL.NP Roles from non-patents: RACT (Reactant or reagent)  
CRN (6027-14-1)

Absolute stereochemistry.



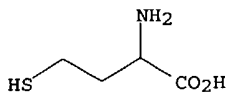
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1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L17 ANSWER 5 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 160568-38-7 REGISTRY  
CN Homocysteine, labeled with deuterium (9CI) (CA INDEX NAME)  
OTHER CA INDEX NAMES:  
CN DL-Homocysteine, labeled with deuterium  
MF C4 H9 N O2 S  
SR CA  
LC STN Files: CA, CAPLUS, USPATFULL  
DT.CA Caplus document type: Patent  
RL.P Roles from patents: ANST (Analytical study)

Searched by Noble Jarrell

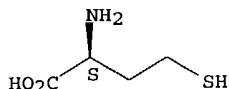
IL XH-2



1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L17 ANSWER 6 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN  
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CN L-Homocysteine, labeled with deuterium (9CI) (CA INDEX NAME)  
FS STEREOSEARCH  
MF C4 H9 N O2 S  
SR CA  
LC STN Files: CA, CAPLUS  
DT.CA CAPLUS document type: Patent  
RL.P Roles from patents: ANST (Analytical study)  
IL XH-2

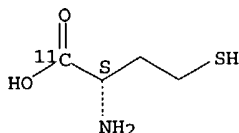
Absolute stereochemistry.



1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L17 ANSWER 7 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 122665-63-8 REGISTRY  
CN L-Homocysteine-1-11C (9CI) (CA INDEX NAME)  
FS STEREOSEARCH  
MF C4 H9 N O2 S  
SR CA  
LC STN Files: CA, CAPLUS  
DT.CA CAPLUS document type: Journal  
RL.NP Roles from non-patents: BIOL (Biological study)

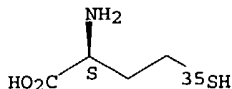
Absolute stereochemistry.



1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L17 ANSWER 8 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 106647-41-0 REGISTRY  
CN L-Homocysteine-35S (9CI) (CA INDEX NAME)  
FS STEREOSEARCH  
MF C4 H9 N O2 S  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT  
DT.CA CAPLUS document type: Journal  
RL.NP Roles from non-patents: BIOL (Biological study); PREP (Preparation);  
RACT (Reactant or reagent)

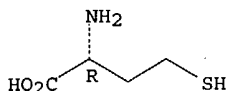
Absolute stereochemistry.



2 REFERENCES IN FILE CA (1907 TO DATE)  
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L17 ANSWER 9 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 88945-99-7 REGISTRY  
CN D-Homocysteine, monosodium salt (9CI) (CA INDEX NAME)  
FS STEREOSEARCH  
MF C4 H9 N O2 S . Na  
LC STN Files: BEILSTEIN\*, CA, CAPLUS, CASREACT  
(\*File contains numerically searchable property data)  
DT.CA Caplus document type: Journal  
RL.NP Roles from non-patents: RACT (Reactant or reagent)  
CRN (6027-14-1)

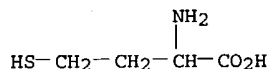
Absolute stereochemistry.



● Na

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L17 ANSWER 10 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 85712-14-7 REGISTRY  
CN Homocysteine, disodium salt (9CI) (CA INDEX NAME)  
OTHER CA INDEX NAMES:  
CN DL-Homocysteine, disodium salt  
MF C4 H9 N O2 S . 2 Na  
SR European Union (EU)  
LC STN Files: BEILSTEIN\*, CA, CAPLUS, CHEMLIST, USPATFULL  
(\*File contains numerically searchable property data)  
Other Sources: EINECS\*\*  
(\*Enter CHEMLIST File for up-to-date regulatory information)  
DT.CA Caplus document type: Patent  
RL.P Roles from patents: RACT (Reactant or reagent)  
CRN (454-29-5)

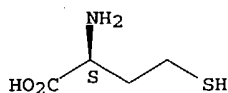


● 2 Na

2 REFERENCES IN FILE CA (1907 TO DATE)  
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L17 ANSWER 11 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 82695-92-9 REGISTRY  
CN L-Homocysteine, monosodium salt (9CI) (CA INDEX NAME)  
FS STEREOSEARCH  
DR 110880-48-3  
MF C4 H9 N O2 S . Na  
LC STN Files: BEILSTEIN\*, CA, CAPLUS, CASREACT  
(\*File contains numerically searchable property data)  
DT.CA Caplus document type: Journal  
RL.NP Roles from non-patents: PREP (Preparation); RACT (Reactant or reagent)  
CRN (6027-13-0)

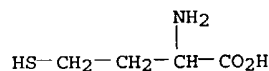
Absolute stereochemistry.



● Na

5 REFERENCES IN FILE CA (1907 TO DATE)  
5 REFERENCES IN FILE CAPLUS (1907 TO DATE)

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RN 73823-57-1 REGISTRY  
CN Homocysteine, monoammonium salt (9CI) (CA INDEX NAME)  
OTHER CA INDEX NAMES:  
CN DL-Homocysteine, monoammonium salt  
MF C4 H9 N O2 S . H3 N  
LC STN Files: CA, CAPLUS  
DT.CA Caplus document type: Patent  
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CRN (454-29-5)

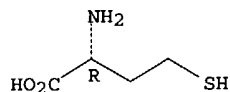


● NH3

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

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RN 73823-56-0 REGISTRY  
CN D-Homocysteine, monoammonium salt (9CI) (CA INDEX NAME)  
FS STEREOSEARCH  
MF C4 H9 N O2 S . H3 N  
LC STN Files: CA, CAPLUS  
DT.CA Caplus document type: Patent  
RL.P Roles from patents: PROC (Process)  
CRN (6027-14-1)

Absolute stereochemistry.

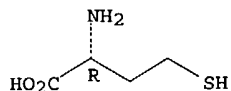


● NH3

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L17 ANSWER 14 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 73292-25-8 REGISTRY  
CN D-Homocysteine, sodium salt (9CI) (CA INDEX NAME)  
FS STEREOSEARCH  
MF C4 H9 N O2 S . x Na  
LC STN Files: BEILSTEIN\*, CA, CAPLUS  
(\*File contains numerically searchable property data)  
DT.CA Caplus document type: Journal  
RL.NP Roles from non-patents: BIOL (Biological study)  
CRN (6027-14-1)

Absolute stereochemistry.

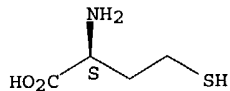


●x Na

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L17 ANSWER 15 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 73292-23-6 REGISTRY  
CN L-Homocysteine, sodium salt (9CI) (CA INDEX NAME)  
FS STEREOSEARCH  
MF C4 H9 N O2 S . x Na  
LC STN Files: BEILSTEIN\*, CA, CAPLUS, CASREACT, TOXCENTER, USPATFULL  
(\*File contains numerically searchable property data)  
DT.CA Caplus document type: Journal; Patent  
RL.P Roles from patents: BIOL (Biological study); PREP (Preparation); RACT  
(Reactant or reagent)  
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RACT (Reactant or reagent)  
CRN (6027-13-0)

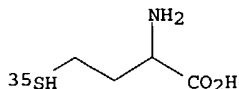
Absolute stereochemistry.



●x Na

8 REFERENCES IN FILE CA (1907 TO DATE)  
8 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L17 ANSWER 16 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 60343-88-6 REGISTRY  
CN Homocysteine-35S (9CI) (CA INDEX NAME)  
OTHER CA INDEX NAMES:  
CN DL-Homocysteine-35S  
MF C4 H9 N O2 S  
LC STN Files: CA, CAPLUS  
DT.CA Caplus document type: Journal  
RL.NP Roles from non-patents: FORM (Formation, nonpreparative)



1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

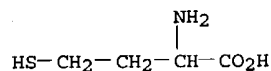
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RN 60177-50-6 REGISTRY  
CN Homocysteine, mixt. with adenosine (9CI) (CA INDEX NAME)  
OTHER CA INDEX NAMES:  
CN Adenosine, mixt. contg. (9CI)  
CN DL-Homocysteine, mixt. with adenosine  
OTHER NAMES:  
CN Adenosine-DL-homocysteine mixt.  
FS STEREOSEARCH  
MF C10 H13 N5 O4 . C4 H9 N O2 S  
CI MXS  
LC STN Files: CA, CAPLUS

Searched by Noble Jarrell

DT.CA Caplus document type: Journal  
 RL.NP Roles from non-patents: BIOL (Biological study)

CM 1

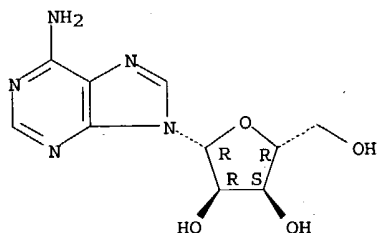
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CM 2

CRN 58-61-7  
 CMF C10 H13 N5 O4

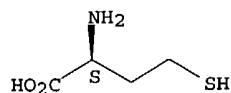
Absolute stereochemistry.



1 REFERENCES IN FILE CA (1907 TO DATE)  
 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L17 ANSWER 18 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN  
 RN 50615-55-9 REGISTRY  
 CN L-Homocysteine, disodium salt (9CI) (CA INDEX NAME)  
 FS STEREOSEARCH  
 MF C4 H9 N O2 S . 2 Na  
 LC STN Files: BEILSTEIN\*, CA, CAPLUS, CASREACT  
 (\*File contains numerically searchable property data)  
 DT.CA Caplus document type: Journal  
 RL.NP Roles from non-patents: PREP (Preparation); PROC (Process); RACT  
 (Reactant or reagent)  
 CRN (6027-13-0)

Absolute stereochemistry.



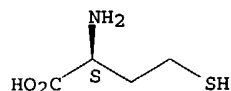
● 2 Na

10 REFERENCES IN FILE CA (1907 TO DATE)  
 10 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L17 ANSWER 19 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN  
 RN 35605-88-0 REGISTRY  
 CN L-Homocysteine, hydriodide (9CI) (CA INDEX NAME)  
 FS STEREOSEARCH  
 MF C4 H9 N O2 S . H I  
 LC STN Files: CA, CAPLUS  
 DT.CA Caplus document type: Journal  
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 CRN (6027-13-0)

Absolute stereochemistry.

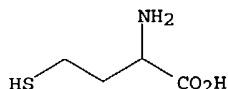




● HI

1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

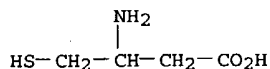
L17 ANSWER 20 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 28223-71-4 REGISTRY  
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OTHER CA INDEX NAMES:  
CN Butyric acid, 2-amino-4-mercapto-, monosodium salt, DL- (8CI)  
CN DL-Homocysteine, monosodium salt  
OTHER NAMES:  
CN DL-Homocysteate sodium  
MF C4 H9 N O2 S . Na  
LC STN Files: BEILSTEIN\*, CA, CAPLUS, TOXCENTER  
(\*File contains numerically searchable property data)  
DT.CA Caplus document type: Conference; Journal  
RL.NP Roles from non-patents: BIOL (Biological study); PROC (Process); PRP (Properties); RACT (Reactant or reagent)  
CRN (454-29-5)



● Na

9 REFERENCES IN FILE CA (1907 TO DATE)  
9 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L17 ANSWER 21 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 21100-02-7 REGISTRY  
CN Butanoic acid, 3-amino-4-mercapto- (9CI) (CA INDEX NAME)  
OTHER CA INDEX NAMES:  
CN Butyric acid, 3-amino-4-mercapto- (8CI)  
OTHER NAMES:  
CN .beta.-Homocysteine  
FS 3D CONCORD  
MF C4 H9 N O2 S  
CI COM  
LC STN Files: BEILSTEIN\*, BIOSIS, CA, CAPLUS, CASREACT, TOXCENTER  
(\*File contains numerically searchable property data)  
DT.CA Caplus document type: Journal  
RL.NP Roles from non-patents: BIOL (Biological study); NORL (No role in record)



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

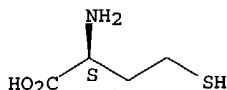
6 REFERENCES IN FILE CA (1907 TO DATE)  
6 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L17 ANSWER 22 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 20244-20-6 REGISTRY  
CN L-Homocysteine, hydrochloride (9CI) (CA INDEX NAME)  
OTHER CA INDEX NAMES:  
CN Butyric acid, 2-amino-4-mercapto-, hydrochloride (8CI)

Searched by Noble Jarrell

FS STEREOSEARCH  
 MF C4 H9 N O2 S . Cl H  
 LC STN Files: BEILSTEIN\*, CA, CAPLUS, CASREACT, TOXCENTER, USPATFULL  
 (\*File contains numerically searchable property data)  
 DT.CA Caplus document type: Conference; Journal; Patent  
 RL.P Roles from patents: BIOL (Biological study); RACT (Reactant or reagent); USES (Uses)  
 RL.NP Roles from non-patents: BIOL (Biological study); RACT (Reactant or reagent)  
 CRN (6027-13-0)

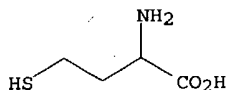
Absolute stereochemistry.



● HCl

4 REFERENCES IN FILE CA (1907 TO DATE)  
 4 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L17 ANSWER 23 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN  
 RN 18265-50-4 REGISTRY  
 CN Homocysteine, hydrochloride (9CI) (CA INDEX NAME)  
 OTHER CA INDEX NAMES:  
 CN Butyric acid, 2-amino-4-mercapto-, hydrochloride, DL- (8CI)  
 CN DL-Homocysteine, hydrochloride  
 OTHER NAMES:  
 CN D,L-Homocysteine hydrochloride  
 MF C4 H9 N O2 S . Cl H  
 LC STN Files: BEILSTEIN\*, CA, CAPLUS, TOXCENTER, USPAT2, USPATFULL  
 (\*File contains numerically searchable property data)  
 DT.CA Caplus document type: Journal; Patent  
 RL.P Roles from patents: PROC (Process); RACT (Reactant or reagent); NORL (No role in record)  
 RL.NP Roles from non-patents: BIOL (Biological study); RACT (Reactant or reagent)  
 CRN (454-29-5)



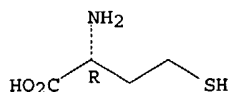
● HCl

6 REFERENCES IN FILE CA (1907 TO DATE)  
 6 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L17 ANSWER 24 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN  
 RN 6027-14-1 REGISTRY  
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 OTHER CA INDEX NAMES:  
 CN Butyric acid, 2-amino-4-mercapto-, D- (8CI)  
 FS STEREOSEARCH  
 MF C4 H9 N O2 S  
 CI COM  
 LC STN Files: BEILSTEIN\*, BIOBUSINESS, BIOSIS, CA, CAPLUS, CASREACT, CHEMINFORMRX, GMELIN\*, TOXCENTER, USPATFULL  
 (\*File contains numerically searchable property data)  
 DT.CA Caplus document type: Journal; Patent  
 RL.P Roles from patents: BIOL (Biological study); FORM (Formation, nonpreparative); PREP (Preparation); RACT (Reactant or reagent)  
 RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); NORL (No role in record)  
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Searched by Noble Jarrell

Absolute stereochemistry.

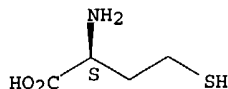


\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

39 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
39 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L17 ANSWER 25 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN  
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CN L-Homocysteine (9CI) (CA INDEX NAME)  
OTHER CA INDEX NAMES:  
CN Butyric acid, 2-amino-4-mercapto-, L- (8CI)  
OTHER NAMES:  
CN (S)-2-Amino-4-mercaptobutanoic acid  
CN (S)-Homocysteine  
CN 2-Amino-4-mercapto-L-butyric acid  
CN 2-Amino-4-mercaptobutyric acid  
CN Butanoic acid, 2-amino-4-mercapto-, (S)-  
CN Homocysteine  
CN NSC 43117  
FS STEREOSEARCH  
DR 454-28-4, 1867-00-1  
MF C4 H9 N O2 S  
CI COM  
LC STN Files: ADISNEWS, AGRICOLA, ANABSTR, BEILSTEIN\*, BIOBUSINESS, BIOSIS, BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHM, DDFU, DIOGENES, DRUGU, EMBASE, GMELIN\*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK\*, PIRA, PROMT, RTECS\*, TOXCENTER, USPAT2, USPATFULL  
(\*File contains numerically searchable property data)  
Other Sources: EINECS\*\*  
(\*Enter CHEMLIST File for up-to-date regulatory information)  
DT.CA Caplus document type: Book; Conference; Dissertation; Journal; Patent; Report  
RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)  
RLD.P Roles for non-specific derivatives from patents: ANST (Analytical study); BIOL (Biological study); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)  
RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)  
RLD.NP Roles for non-specific derivatives from non-patents: ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); MSC (Miscellaneous); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses)

Absolute stereochemistry.



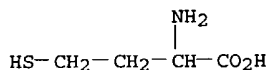
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

5016 REFERENCES IN FILE CA (1907 TO DATE)  
83 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
5039 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L17 ANSWER 26 OF 26 REGISTRY COPYRIGHT 2004 ACS on STN  
RN 454-29-5 REGISTRY

Searched by Noble Jarrell

CN Homocysteine (9CI) (CA INDEX NAME)  
 OTHER CA INDEX NAMES:  
 CN Butyric acid, 2-amino-4-mercapto-, DL- (8CI)  
 CN DL-Homocysteine  
 OTHER NAMES:  
 CN (.+-.)-Homocysteine  
 CN NSC 206252  
 FS 3D CONCORD  
 DR 115154-46-6  
 MF C4 H9 N O2 S  
 CI COM  
 LC STN Files: ADISNEWS, AGRICOLA, BEILSTEIN\*, BIOBUSINESS, BIOSIS, CA, CAOLD, CAPLUS, CASREACT, CEN, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHM, DIOGENES, GMELIN\*, HODOC\*, IFICDB, IFIPAT, IFIUDB, MEDLINE, PIRA, PROMT, RTECS\*, TOXCENTER, USPAT2, USPATFULL  
 (\*File contains numerically searchable property data)  
 Other Sources: EINECS\*\*  
 (\*\*Enter CHEMLIST File for up-to-date regulatory information)  
 DT.CA Caplus document type: Conference; Journal; Patent  
 RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation); PROC (Process); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)  
 RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); CMBI (Combinatorial study); FORM (Formation, nonpreparative); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); RACT (Reactant or reagent); USES (Uses); NORL (No role in record)  
 RLD.NP Roles for non-specific derivatives from non-patents: BIOL (Biological study); PREP (Preparation); PROC (Process); PRP (Properties)



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

412 REFERENCES IN FILE CA (1907 TO DATE)  
 11 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
 413 REFERENCES IN FILE CAPLUS (1907 TO DATE)  
 4 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

=> d ide l18 tot

L18 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2004 ACS on STN  
 RN 9024-41-3 REGISTRY  
 CN Desulfhydrase, homocysteine (9CI) (CA INDEX NAME)  
 OTHER NAMES:  
 CN E.C. 4.4.1.2  
 CN Homocysteinase  
 CN Homocysteine .alpha.,.gamma.-lyase  
 CN Homocysteine desulfhydrase  
 CN Homocysteine desulfurase  
 MF Unspecified  
 CI MAN  
 LC STN Files: BIOSIS, CA, CAPLUS, TOXCENTER, USPAT2, USPATFULL  
 DT.CA Caplus document type: Journal; Patent  
 RL.P Roles from patents: ANST (Analytical study); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); USES (Uses)  
 RLD.P Roles for non-specific derivatives from patents: ANST (Analytical study); BIOL (Biological study); USES (Uses)  
 RL.NP Roles from non-patents: ANST (Analytical study); BIOL (Biological study); OCCU (Occurrence); PREP (Preparation); PROC (Process); PRP (Properties); USES (Uses); NORL (No role in record)

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

31 REFERENCES IN FILE CA (1907 TO DATE)  
 1 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
 31 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d his

(FILE 'HOME' ENTERED AT 08:25:15 ON 07 OCT 2004)

FILE 'HCAPLUS' ENTERED AT 08:25:28 ON 07 OCT 2004

L1 945704 BODY FLUID+OLD,NT/CT  
L2 51989 IMMUNOASSAY+OLD,NT/CT  
L3 6502 IMMUNOCHEMICAL ANALYSIS/CT (L) ?ASSAY?/BI  
L4 1965 MICROTITER PLATES/CT  
L5 2125 MICROANALYSIS+NT/CT  
L6 442 MICROCHEMISTRY/CT  
L7 2166 LABORATORY WARE+NT/CT (L) (MICROPLATE? OR MICROTIT?)  
L8 45 MICROTITRATION/CT  
L9 11949 TEST KITS/CT  
L10 506 CLINICAL ANALYZERS/CT  
L11 850 ANALYSIS/CW (L) (CLIN? (L) APP?)  
L12 11410 L1 AND L2-11  
L13 7719 L12 AND (PY<=2000 OR PRY<=2000 OR AY<=2000 OR PD<20000410 OR AD

FILE 'REGISTRY' ENTERED AT 09:09:09 ON 07 OCT 2004

L14 239 C4H9NO2S  
L15 31 L14 AND HOMOCYSTEINE  
L16 29 L15 NOT ((PMS OR MAN OR IDS)/CI OR COMPD OR COMPOUND OR UNSPECI  
L17 26 L16 NOT (D OR T)/ELS  
L18 1 HOMOCYSTEINE (1A) (DESULPHURASE OR DESULFURASE)

FILE 'HCAPLUS' ENTERED AT 09:14:54 ON 07 OCT 2004

L19 5467 L17  
L20 9204 HOMOCYSTEINE OR (BUTYRIC OR BUTANOIC) (1A) ACID (1A) AMINO (1A)  
L21 31 L18  
L22 68 (DESULFHYDRASE OR DESULPHHYDRASE OR DESULPHYDRASE OR DESULFURAS  
L23 31 L13 AND L19-20  
L24 7 L23 AND L21-22  
E CONNELLY C/AU  
L25 12 E3-4,E18  
E BRADY J/AU  
L26 49 E49-53,E3,E6,E8,E13  
L27 24 (AXIS AND SHIELD)/CS,PA  
L28 1 L24 AND L25-26  
L29 1 L24 AND L27  
L30 1 L28-29  
L31 6 L24 NOT L30

*230 Applicant*

FILE 'WPIX' ENTERED AT 10:08:50 ON 07 OCT 2004

L32 13 ((DESULFHYDRASE OR DESULPHHYDRASE OR DESULPHYDI  
L33 1428 C12Q001-527/IC,ICS,ICM OR (B04-B02C5 OR C04-B0  
E HOMOCYSTEINE DESULFUPHURASE/DCN  
E HOMOCYSTEINE DESULPHURASE/DCN  
E HOMOCYSTEINE DESULFURASE/DCN  
E HOMOCYSTEINE/DCN  
E E3+ALL  
L34 175 R01646/DCN OR 1646/DRN  
L35 588 (HOMOCYSTEINE OR (BUTYRIC OR BUTANOIC) (1A) ACID (1A) AMINO (1A

FILE 'HCAPLUS' ENTERED AT 10:20:58 ON 07 OCT 2004

L36 9204 HOMOCYSTEINE OR (BUTYRIC OR BUTANOIC) (1A) ACID (1A) AMINO (1A)

FILE 'WPIX' ENTERED AT 10:21:39 ON 07 OCT 2004

L37 47526 G01N033-48/IC,ICM,ICS OR (B04-B04B? OR C04-B04B? OR B04-B04D? O  
L38 40964 G01N033-53/IC,ICM,ICS OR S03-E14H4/MC  
L39 8891 L37 AND L38  
L40 44 L39 AND L32-33  
L41 3 L40 AND L34-35  
E CONNELLY C/AU  
L42 4 E3  
E BRADY J/AU  
L43 96 E3,E6-7,E15  
L44 33 (AXIS AND SHIELD)/CS,PA  
L45 0 L41 AND L42-43  
L46 0 L41 AND L44  
L47 0 L41 NOT (PY>2000 OR AY>2000 OR PRY>2000)

=> b hcap

FILE 'HCAPLUS' ENTERED AT 10:28:09 ON 07 OCT 2004

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PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

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FILE COVERS 1907 - 7 Oct 2004 VOL 141 ISS 15  
FILE LAST UPDATED: 6 Oct 2004 (20041006/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d all 130

L30 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2004 ACS on STN  
AN 2001:763310 HCAPLUS  
DN 135:300667  
ED Entered STN: 19 Oct 2001  
TI Homocysteine assay in a body fluid sample  
IN Connolly, Caroline; Brady, Jeff  
PA Axis-Shield ASA, UK  
SO PCT Int. Appl., 38 pp.  
CODEN: PIXXD2  
DT Patent  
LA English  
IC ICM G01N033-48  
CC 9-2 (Biochemical Methods)  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001077670	A2	20011018	WO 2001-GB1615	20010410 <--
	WO 2001077670	A3	20020516		
	W:				
	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW:				
	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	EP 1272661	A2	20030108	EP 2001-919648	20010410 <--
	R:				
	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	JP 2003530574	T2	20031014	JP 2001-574876	20010410 <--
	US 2003040030	A1	20030227	US 2002-857433	20020305 <--
PRAI	GB 2000-8784	A	20000410	<--	
	WO 2001-GB1615	W	20010410		

# CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2001077670	ICM	G01N033-48
AB	The present invention provides an improved method of assessing/quantifying the amount of homocysteine in a body fluid sample via an enzymic assay which comprises reducing background signal by treatment with one of the following: a reducing agent, a pyruvate deactivating agent, heat treatment, or by lyophilizing or immobilizing the homocysteine converting enzyme.	
ST	homocysteine assay body fluid	
IT	Reaction	
	(Cycling; homocysteine assay in a body fluid sample)	
IT	Filters	
	(Exclusion; homocysteine assay in a body fluid sample)	
IT	Enzymes, uses	
	RL: ARG (Analytical reagent use); PEP (Physical, engineering or chemical process); ANST (Analytical study); PROC (Process); USES (Uses)	
	(Homocysteine converting; homocysteine assay in a body fluid sample)	
IT	Thiols (organic), biological studies	

RL: BSU (Biological study, unclassified); BIOL (Biological study)  
(dithiols, binding agent; homocysteine assay in a body fluid sample)

IT Immobilization, biochemical  
(enzyme; homocysteine assay in a body fluid sample)

IT Blood  
Body fluid  
Centrifugation  
Concentration (condition)  
Cryoprotectants  
Erythrocyte  
Filters  
Filtration  
Freeze drying  
Heat treatment  
Heating  
Liquids  
Molecular sieves  
Neutralization  
Oxidation  
Reducing agents  
Stabilizing agents  
Standard substances, analytical  
Sulfhydryl group  
Test kits  
(homocysteine assay in a body fluid sample)

IT Enzymes, uses  
Reagents  
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(homocysteine assay in a body fluid sample)

IT Proteins, general, analysis  
RL: ARU (Analytical role, unclassified); NUU (Other use, unclassified);  
ANST (Analytical study); USES (Uses)  
(homocysteine assay in a body fluid sample)

IT Thiols (organic), biological studies  
RL: BSU (Biological study, unclassified); RCT (Reactant); BIOL (Biological study); RACT (Reactant or reagent)  
(homocysteine assay in a body fluid sample)

IT Enzymes, uses  
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(immobilized; homocysteine assay in a body fluid sample)

IT Disulfides  
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(organic; homocysteine assay in a body fluid sample)

IT 6027-13-0, Homocysteine  
RL: ANT (Analyte); ANST (Analytical study)  
(homocysteine assay in a body fluid sample)

IT 53-84-9, NAD 58-68-4, NADH 74-88-4, Methyl iodide, uses 302-01-2, Hydrazine, uses 541-59-3, Maleimide 3483-12-3, Dithiothreitol 5961-85-3, Triscarboxyethylphosphine 6892-68-8, Dithioerythritol 9001-05-2, Catalase 9001-60-9, Lactate dehydrogenase 9001-96-1, Pyruvate oxidase. 9014-19-1, Pyruvate carboxylase. 9014-20-4, Pyruvate dehydrogenase 9024-41-3, Homocysteine desulfurase 9025-03-0, Acetoacetate decarboxylase  
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(homocysteine assay in a body fluid sample)

IT 7722-84-1, Hydrogen peroxide, reactions  
RL: ARG (Analytical reagent use); RCT (Reactant); ANST (Analytical study); RACT (Reactant or reagent); USES (Uses)  
(homocysteine assay in a body fluid sample)

IT 462-10-2, Homocystine  
RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
(homocysteine assay in a body fluid sample)

IT 127-17-3, Pyruvic acid, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(homocysteine assay in a body fluid sample)

=> d all 131 tot

L31 ANSWER 1 OF 6 HCAPLUS COPYRIGHT 2004 ACS on STN  
AN 2003:570545 HCAPLUS  
DN 139:130391  
ED Entered STN: 25 Jul 2003  
TI Enzymatic cycling assays for homocysteine and cystathionine  
using enzymes manufactured in transgenic hosts

Searched by Noble Jarrell

IN Kawasaki, Glenn; Webb, Heather Kay; Owens, Jeffrey; Forest, Doreen;  
Liedtke, Raymond; Lawson, Sobomabo; Legaz, Mark  
PA Catch, Inc., USA  
SO U.S. Pat. Appl. Publ., 50 pp., Cont.-in-part of U.S. Ser. No. 704,036.  
CODEN: USXXCO  
DT Patent  
LA English  
IC ICM C12Q001-26  
ICS C12Q001-00  
NCL 435025000; 435004000  
CC 9-2 (Biochemical Methods)  
Section cross-reference(s): 3, 7  
FAN.CNT 3

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003138872	A1	20030724	US 2001-12762	20011106 <--
	US 6635438	B2	20031021		
	US 6664073	B1	20031216	US 2000-704036	20001101 <--
	WO 2003040694	A2	20030515	WO 2002-US35777	20021106
	WO 2003040694	A3	20040819		
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	BR 2002013936	A	20040831	BR 2002-13936	20021106
	US 2004096929	A1	20040520	US 2003-651183	20030828 <--
PRAI	US 1999-163126P	P	19991102	<--	
	US 2000-203349P	P	20000510	<--	
	US 2000-704036	A2	20001101	<--	
	US 2001-12762	A	20011106		
	WO 2002-US35777	W	20021106		

## CLASS

	PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
	US 2003138872	ICM	C12Q001-26
		ICS	C12Q001-00
		NCL	435025000; 435004000
	US 2003138872	ECLA	C12Q001/26; C12Q001/32; C12Q001/527 <--
	US 6664073	ECLA	C12Q001/26; C12Q001/32; C12Q001/527 <--
	US 2004096929	ECLA	C12Q001/26; C12Q001/32; C12Q001/527; G01N033/68A2D2 <--
AB	An enzymic cycling assay for assessing the concentration of <b>homocysteine</b> and/or cystathionine in a biol. fluid such as blood, blood derivs., or urine is described. The solution containing <b>homocysteine</b> and/or cystathionine is incubated with a cystathionine .beta.-synthase, cystathionine .beta.-lyase and L-serine catalyze the conversion of <b>homocysteine</b> form to cystathionine and the reconversion of cystathionine to <b>homocysteine</b> with the release of pyruvate and ammonia. The yield of ammonia or pyruvate is a linear function of the concentration of <b>homocysteine</b> or cystathionine in the sample. Expression vectors for the manufacture of the enzymes and test kits for carrying out the assay are described. In preferred embodiments, the assays can be conducted in 15 min or less, with a min. of enzyme usage. <b>Homocysteine</b> at concns. of 10.mu.M could be detected in 10 min.		
ST	enzymic cycling assay <b>homocysteine</b> cystathionine; cystathionine synthase lyase cycling assay <b>homocysteine</b>		
IT	Promoter (genetic element) RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses) (ADH2, cystathionine-.beta.-synthase gene expression from; enzymic cycling assays for <b>homocysteine</b> and cystathionine)		
IT	Gene, microbial RL: BUU (Biological use, unclassified); PRP (Properties); BIOL (Biological study); USES (Uses) (CYS4, cloning and expression of; enzymic cycling assays for <b>homocysteine</b> and cystathionine)		
IT	Transcription factors RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses) (MetR, complex formation with reduced <b>homocysteine</b> ; enzymic		



cycling assays for homocysteine and cystathionine)

IT Diagnosis  
(agents; enzymic cycling assays for homocysteine and cystathionine)

IT Sensors  
(ammonia; enzymic cycling assays for homocysteine and cystathionine)

IT Phosphates, miscellaneous  
RL: MSC (Miscellaneous)  
(buffer; enzymic cycling assays for homocysteine and cystathionine)

IT Lipoproteins  
RL: REM (Removal or disposal); PROC (Process)  
(clearing agent for, reducing solution turbidity; enzymic cycling assays for homocysteine and cystathionine)

IT Genetic element  
RL: BUU (Biological use, unclassified); PRP (Properties); BIOL (Biological study); USES (Uses)  
(consensus sequence for homocysteine metabolite binding transcription factor; enzymic cycling assays for homocysteine and cystathionine)

IT Bordetella avium  
Escherichia coli  
Eubacteria  
Eukaryota  
Haemophilus influenzae  
Prokaryote  
Rhizobium leguminosarum  
Saccharomyces cerevisiae  
Yeast  
(cystathionine .beta.-synthase and cystathionine .beta.-lyase from; enzymic cycling assays for homocysteine and cystathionine)

IT Blood analysis  
Blood plasma  
Blood serum  
DNA sequences  
Protein sequences  
Test kits  
Urine analysis  
(enzymic cycling assays for homocysteine and cystathionine)

IT Color reaction  
Colorimetry  
(for assay; enzymic cycling assays for homocysteine and cystathionine)

IT Fluorometry  
(for determination of homocysteine/transcription factor complex; enzymic cycling assays for homocysteine and cystathionine)

IT Genetic vectors  
(for enzyme expression; enzymic cycling assays for homocysteine and cystathionine)

IT Detergents  
(for reducing solution turbidity; enzymic cycling assays for homocysteine and cystathionine)

IT Transcription factors  
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)  
(homocysteine metabolite binding, complex formation with reduced homocysteine; enzymic cycling assays for homocysteine and cystathionine)

IT Diagnosis  
(mol.; enzymic cycling assays for homocysteine and cystathionine)

IT Immobilization, molecular or cellular  
(of fusion protein; enzymic cycling assays for homocysteine and cystathionine)

IT Thiols (organic), uses  
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(reducing agent; enzymic cycling assays for homocysteine and cystathionine)

IT Reducing agents  
(use for assay, for reducing homocysteine and mixed disulfides; enzymic cycling assays for homocysteine and cystathionine)

IT Buffers  
(use in reaction mixture; enzymic cycling assays for homocysteine and cystathionine)

- IT 127-17-3, Pyruvic acid, analysis 14798-03-9, Ammonium, analysis  
RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
(as analyte; enzymic cycling assays for homocysteine and cystathionine)
- IT 56-81-5, Glycerol, miscellaneous  
RL: MSC (Miscellaneous)  
(as buffer component; enzymic cycling assays for homocysteine and cystathionine)
- IT 72943-20-5D, N-3-Sulfopropylaniline, alkyl derivs. 96497-76-6, N-Ethyl-N-(2-hydroxy-3-sulfopropyl)-m-toluidine  
RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
(as hydrogen donor; enzymic cycling assays for homocysteine and cystathionine)
- IT 9001-62-1, Lipase  
RL: ARU (Analytical role, unclassified); CAT (Catalyst use); ANST (Analytical study); USES (Uses)  
(as lipoprotein clearing agent; enzymic cycling assays for homocysteine and cystathionine)
- IT 10016-20-3, .alpha.-Cyclodextrin  
RL: ARU (Analytical role, unclassified); MOA (Modifier or additive use); ANST (Analytical study); USES (Uses)  
(as lipoprotein clearing agent; enzymic cycling assays for homocysteine and cystathionine)
- IT 77-86-1, TRIS 7365-45-9, HEPES  
RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
(buffer; enzymic cycling assays for homocysteine and cystathionine)
- IT 58-68-4, NADH  
RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
(coenzyme; enzymic cycling assays for homocysteine and cystathionine)
- IT 53-84-9, NAD+  
RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
(colorimetric determination of; enzymic cycling assays for homocysteine and cystathionine)
- IT 50-21-5, Lactic acid, analysis  
RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
(conversion of pyruvate to, for pyruvate determination; enzymic cycling assays for homocysteine and cystathionine)
- IT 56-88-2, Cystathionine 6027-13-0, L-Homocysteine  
RL: ANT (Analyte); ANST (Analytical study)  
(determination of; enzymic cycling assays for homocysteine and cystathionine)
- IT 9023-99-8, Cystathionine .beta.-synthase 9023-99-8D, Cystathionine .beta.-synthase, fusion proteins with cystathionine .beta.-lyase 9055-05-4 9055-05-4D, Lyase, cystathionine .beta.-, fusion proteins with cystathionine .beta.-synthase  
RL: ARU (Analytical role, unclassified); CAT (Catalyst use); PRP (Properties); ANST (Analytical study); USES (Uses)  
(enzymic cycling assays for homocysteine and cystathionine)
- IT 60-00-4, EDTA, uses  
RL: MOA (Modifier or additive use); USES (Uses)  
(enzymic cycling assays for homocysteine and cystathionine)
- IT 9002-92-0, Brij-35 9002-93-1, Triton X-100 9043-30-5, Genapol X-80  
RL: MOA (Modifier or additive use); USES (Uses)  
(for reducing solution turbidity; enzymic cycling assays for homocysteine and cystathionine)
- IT 69-78-3, 5,5'-Dithiobis(2-nitrobenzoic acid) 299-11-6, Phenazine methosulfate 956-48-9, 2,6-Dichlorophenolindophenol 1910-42-5, Methyl viologen  
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(in colorimetric determination of NAD+; enzymic cycling assays for homocysteine and cystathionine)
- IT 7722-84-1, Hydrogen peroxide, analysis  
RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
(in pyruvate assay; enzymic cycling assays for homocysteine and cystathionine)
- IT 566966-23-2  
RL: BUU (Biological use, unclassified); PRP (Properties); BIOL (Biological study); USES (Uses)  
(nucleotide sequence, metR binding element, homocysteine assays using; enzymic cycling assays for homocysteine and cystathionine)
- IT 60-24-2, .beta.-Mercaptoethanol 507-09-5, Thioacetic acid, uses 2465-93-2 3483-12-3, Dithiothreitol 6892-68-8, Dithioerythritol 16971-29-2, Borohydride

RL: MOA (Modifier or additive use); USES (Uses)  
 (reducing agent; enzymic cycling assays for homocysteine and cystathionine)

IT 9012-96-8, Cystathionine .gamma.-lyase  
 RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); CAT (Catalyst use); ANST (Analytical study); BIOL (Biological study); USES (Uses)  
 (to convert cystathionine to .alpha.-ketoglutarate; enzymic cycling assays for homocysteine and cystathionine)

IT 566968-60-3 566968-61-4 566968-62-5 566968-63-6 566968-64-7  
 566968-65-8 566968-66-9 566968-67-0 566968-68-1 566968-69-2  
 566968-70-5 566968-71-6 566968-72-7 566968-73-8 566968-74-9  
 566968-75-0 566968-76-1 566968-79-4  
 RL: PRP (Properties)  
 (unclaimed nucleotide sequence; enzymic cycling assays for homocysteine and cystathionine using enzymes manufactured in transgenic hosts)

IT 566968-77-2 566968-78-3  
 RL: PRP (Properties)  
 (unclaimed protein sequence; enzymic cycling assays for homocysteine and cystathionine using enzymes manufactured in transgenic hosts)

IT 9003-99-0, Peroxidase  
 RL: ARU (Analytical role, unclassified); CAT (Catalyst use); ANST (Analytical study); USES (Uses)  
 (use for assay; enzymic cycling assays for homocysteine and cystathionine)

IT 9001-60-9, Lactate dehydrogenase  
 RL: ARU (Analytical role, unclassified); CAT (Catalyst use); ANST (Analytical study); USES (Uses)  
 (use for conversion of pyruvate to lactate; enzymic cycling assays for homocysteine and cystathionine)

IT 9001-96-1, Pyruvate oxidase  
 RL: ARU (Analytical role, unclassified); CAT (Catalyst use); ANST (Analytical study); USES (Uses)  
 (use for enzymic conversion of pyruvate to hydrogen peroxide; enzymic cycling assays for homocysteine and cystathionine)

L31 ANSWER 2 OF 6 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 2002:570668 HCAPLUS  
 DN 137:121906  
 ED Entered STN: 01 Aug 2002  
 TI Homogeneous enzymic assay for vitamin B6 and improvements in hydrogen sulfide detection  
 IN Xu, Mingxu; Han, Qinghong; Tan, Yuying  
 PA Anticancer, Inc., USA  
 SO U.S., 14 pp., Cont.-in-part of U.S. 6,066,467.  
 CODEN: USXXAM  
 DT Patent  
 LA English  
 IC ICM C12Q001-37  
 ICS C12Q001-00; C12Q001-48; C12Q001-52; C12Q033-53  
 NCL 435024000  
 CC 9-2 (Biochemical Methods)  
 Section cross-reference(s): 14

FAN.CNT 9

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6426194	B1	20020730	US 2000-495889	20000201 <--
US 6066467	A	20000523	US 1999-340991	19990628 <--
PRAI US 1999-118031P	P	19990201		<--
US 1999-340991	A2	19990628		<--
US 1997-899776	B2	19970724		<--
US 1997-918214	B2	19970825		<--
US 1997-941921	B2	19971001		<--
US 1997-974609	A2	19971119		<--
US 1998-61337	A2	19980417		<--
US 1998-122129	A2	19980724		<--

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 6426194	ICM	C12Q001-37
	ICS	C12Q001-00; C12Q001-48; C12Q001-52; C12Q033-53
	NCL	435024000

AB Enzymic methods to determine the concentration of pyridoxal 5'-phosphate (PLP) in biol. fluids are described. The methods of the invention are useful to

assess risk for cardiovascular disease. The assay can be a homogeneous assay using the ability of PLP to function as a co-enzyme for homocysteinase and related enzymes and measuring the products of the reaction preferably spectrophotometrically. The invention also includes improvements in sensitivity of assays for measuring hydrogen sulfide production by measuring fluorescence as opposed to absorbance of the oxidized product of H<sub>2</sub>S with N,N-dialkyl p-phenylene diamine.

- ST homogeneous enzymic assay vitamin B6 hydrogen sulfide detection  
 IT Biological materials  
 Blood analysis  
 Blood plasma  
 Body fluid  
 Cardiovascular system, disease  
 Colorimetry  
 Concentration (condition)  
 Fluorometry  
 Human  
 Optical absorption  
 Oxidizing agents  
 Precipitation (chemical)  
 Reaction  
 Spectrophotometry  
 Test kits  
 UV and visible spectroscopy  
 (homogeneous enzymic assay for vitamin B6 and improvements in hydrogen sulfide detection)  
 IT Enzymes, uses  
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
 (homogeneous enzymic assay for vitamin B6 and improvements in hydrogen sulfide detection)  
 IT 9024-41-3, Homocysteinase  
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
 (apoenzyme from; homogeneous enzymic assay for vitamin B6 and improvements in hydrogen sulfide detection)  
 IT 54-47-7, Pyridoxal 5'-phosphate 6027-13-0, Homocysteine  
 7783-06-4, Hydrogen sulfide, analysis 8059-24-3, Vitamin B6  
 RL: ANT (Analyte); ANST (Analytical study)  
 (homogeneous enzymic assay for vitamin B6 and improvements in hydrogen sulfide detection)  
 IT 106-50-3D, p-Phenylene diamine, dialkyl derivs. 2836-02-4, N,N-Dibutyl p-phenylene diamine 7439-92-1D, Lead, ion, uses 9012-96-8, Cysteine lyase 42616-25-1, Methioninase  
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
 (homogeneous enzymic assay for vitamin B6 and improvements in hydrogen sulfide detection)

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L31 ANSWER 3 OF 6 HCAPLUS COPYRIGHT 2004 ACS on STN

AN 2000:535310 HCAPLUS

DN 133:132107

ED Entered STN: 04 Aug 2000

TI Homogeneous enzymatic assay for vitamin B6 and improvements in H2S  
detection

IN Xu, Mingxu; Han, Qinghong; Tan, Yuying

PA Anticancer, Inc., USA

SO PCT Int. Appl., 30 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM C12Q001-00

CC 9-2 (Biochemical Methods)

Section cross-reference(s): 14, 79

FAN.CNT 9

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000044932	A2	20000803	WO 2000-US2721	20000201 <--
	WO 2000044932	A3	20010308		
	W:	AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
	US 6066467	A	20000523	US 1999-340991	19990628 <--
	CA 2361077	AA	20000803	CA 2000-2361077	20000201 <--
	EP 1157128	A2	20011128	EP 2000-910055	20000201 <--
	R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO			
	JP 2002535009	T2	20021022	JP 2000-596172	20000201 <--
PRAI	US 1999-118031P	P	19990201	<--	

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US 1999-340991	A	19990628	<--
US 1997-899776	B2	19970724	<--
US 1997-918214	B2	19970825	<--
US 1997-941921	B2	19971001	<--
US 1997-974609	A2	19971119	<--
US 1998-61337	A2	19980417	<--
US 1998-122129	A2	19980724	<--
WO 2000-US2721	W	20000201	<--

## CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2000044932	ICM	C12Q001-00
AB	Enzymic methods to determine the concentration of pyridoxal 5'-phosphate (PLP) in biol. fluids are described. The methods of the invention are useful to assess risk for cardiovascular disease. The assay can be a homogeneous assay using the ability of PLP to function as a co-enzyme for homocysteinase and related enzymes and measuring the products of the reaction preferably spectrophotometrically. The invention also includes improvements in sensitivity of assays for measuring hydrogen sulfide production by measuring fluorescence as opposed to absorbance of the oxidized product of H2S with N,N-dialkyl p-phenylene diamine.	
ST	vitamin B6 homogeneous enzyme assay; hydrogen sulfide fluorescence assay; pyridoxal phosphate body fluid enzyme assay	
IT	Cardiovascular system (disease, risk for, assessment of; homogeneous enzymic assay for vitamin B6 and improvements in H2S detection)	
IT	Risk assessment (for cardiovascular disease; homogeneous enzymic assay for vitamin B6 and improvements in H2S detection)	
IT	Blood analysis Body fluid Fluorometry Oxidizing agents Spectrophotometry Test kits (homogeneous enzymic assay for vitamin B6 and improvements in H2S detection)	
IT	9012-96-8D, immobilized 9024-41-3D, Homocysteinase, immobilized 42616-25-1D, Methioninase, immobilized RL: ARG (Analytical reagent use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses) (apoenzyme of; homogeneous enzymic assay for vitamin B6 and improvements in H2S detection)	
IT	6027-13-0, Homocysteine 8059-24-3, Vitamin B6 RL: ANT (Analyte); ANST (Analytical study) (homogeneous enzymic assay for vitamin B6 and improvements in H2S detection)	
IT	7783-06-4, Hydrogen sulfide, analysis RL: ANT (Analyte); FMU (Formation, unclassified); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); FORM (Formation, nonpreparative); USES (Uses) (homogeneous enzymic assay for vitamin B6 and improvements in H2S detection)	
IT	54-47-7, Pyridoxal 5'-phosphate RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses) (homogeneous enzymic assay for vitamin B6 and improvements in H2S detection)	
IT	106-50-3D, p-Phenylene diamine, N,N-dialkyl derivs. 454-29-5, Homocysteine 13746-66-2, Potassium ferricyanide RL: ARG (Analytical reagent use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses) (homogeneous enzymic assay for vitamin B6 and improvements in H2S detection)	
IT	7439-92-1, Lead, biological studies RL: ARG (Analytical reagent use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses) (ion; homogeneous enzymic assay for vitamin B6 and improvements in H2S detection)	
IT	9012-96-8 9024-41-3, Homocysteinase 42616-25-1, Methioninase RL: ARG (Analytical reagent use); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses) (pyridoxal 5'-phosphate-dependent, apoenzyme of; homogeneous enzymic assay for vitamin B6 and improvements in H2S detection)	

L31 ANSWER 4 OF 6 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 2000:344073 HCAPLUS  
 DN 133:2202  
 ED Entered STN: 24 May 2000  
 TI High specificity homocysteine enzymic assays for biological samples  
 IN Xu, Mingxu; Tan, Yuying; Han, Qinghong; Tang, Li  
 PA Anticancer, Inc., USA  
 SO U.S., 37 pp., Cont.-in-part of U.S. Ser. No. 122,129.  
 CODEN: USXXAM  
 DT Patent  
 LA English  
 IC ICM C12Q001-37  
 ICS C12Q001-00  
 NCL 435023000  
 CC 9-2 (Biochemical Methods)  
 Section cross-reference(s): 3, 7, 14

FAN.CNT 9

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6066467	A	20000523	US 1999-340991	19990628 <--
	US 6140102	A	20001031	US 1997-974609	19971119 <--
	US 5985540	A	19991116	US 1998-61337	19980417 <--
	US 5998191	A	19991207	US 1998-122129	19980724 <--
	CA 2361077	AA	20000803	CA 2000-2361077	20000201 <--
	WO 2000044932	A2	20000803	WO 2000-US2721	20000201 <--
	WO 2000044932	A3	20010308		
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
EP	1157128	A2	20011128	EP 2000-910055	20000201 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	US 6426194	B1	20020730	US 2000-495889	20000201 <--
	JP 2002535009	T2	20021022	JP 2000-596172	20000201 <--
	US 6468762	B1	20021022	US 2000-549098	20000412 <--
	WO 2001000853	A1	20010104	WO 2000-US17838	20000628 <--
	W: AU, CA, JP				
	RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
EP	1210443	A1	20020605	EP 2000-943262	20000628 <--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY				
	JP 2003503065	T2	20030128	JP 2001-506845	20000628 <--
PRAI	US 1997-899776	B2	19970724	<--	
	US 1997-918214	B2	19970825	<--	
	US 1997-941921	B2	19971001	<--	
	US 1997-974609	A2	19971119	<--	
	US 1998-61337	A2	19980417	<--	
	US 1998-122129	A2	19980724	<--	
	US 1999-118031P	P	19990201	<--	
	US 1999-340991	A	19990628	<--	
	WO 2000-US2721	W	20000201	<--	
	US 2000-549098	A	20000412	<--	
	WO 2000-US17838	W	20000628	<--	

## CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 6066467	ICM	C12Q001-37
	ICS	C12Q001-00
	NCL	435023000
US 6140102	ECLA	C12N009/02F; C12N009/10G; C12Q001/527; G01N033/68A2D2

AB Novel enzymic methods to determine the concentration of homocysteine in biol. fluids are described. In a typical embodiment of the invention, the biol. fluid sample is from a patient, and the methods of the invention are useful to assess risk for cardiovascular disease. The novel methods of the invention involve use of particular homocysteinase enzymes that permit the determination of homocysteine concns. in biol. samples without interference from the concns. of cysteine and/or of methionine

that are routinely present in such samples. There is also provided a diagnostic kit for use in determining the amount of homocysteine in a biol. sample comprising (a) a homocysteinase having the aforementioned characteristics, and (b) at least one reagent capable of being used to determine the amount of product formed in the homocysteinase reaction. In a further aspect, the homocysteinase is provided as a chimeric mol. that comprises amino acid subsequences derived from, or patterned on, more than one homocysteinase, and which is typically produced from a chimeric polynucleotide that encodes therefor. Addnl. enhancements in homocysteine assay methodol. include use of the enzyme .gamma.-glutamylcysteine synthetase to further limit any interference from cysteine present in the biol. samples.

- ST homocysteine enzyme assay biol fluid; homocysteinase  
chimeric homocysteine fluorometry assay
- IT Disulfide group  
(agent reducing; high specificity homocysteine enzymic assays  
for biol. samples)
- IT Cardiovascular system  
(disease; high specificity homocysteine enzymic assays for  
biol. samples)
- IT Animal tissue  
(fluid of; high specificity homocysteine enzymic assays for  
biol. samples)
- IT Risk assessment  
(for cardiovascular disease; high specificity homocysteine  
enzymic assays for biol. samples)
- IT Blood analysis
  - Body fluid
  - Buffers
  - DNA sequences
  - Detergents
  - Diagnosis
  - Enzyme kinetics
  - Fermentation
  - Fluorometry
  - Molecular cloning
  - Protein sequences
  - Reducing agents
  - Surfactants
  - Test kits
  - Urine analysis  
(high specificity homocysteine enzymic assays for biol.  
samples)
- IT Reagents  
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(high specificity homocysteine enzymic assays for biol.  
samples)
- IT Fusion proteins (chimeric proteins)  
RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP  
(Preparation)  
(high specificity homocysteine enzymic assays for biol.  
samples)
- IT Gene, microbial  
RL: BPN (Biosynthetic preparation); BIOL (Biological study); PREP  
(Preparation)  
(high specificity homocysteine enzymic assays for biol.  
samples)
- IT Pseudomonas putida  
Trichomonas vaginalis  
(homocysteinase of; high specificity homocysteine  
enzymic assays for biol. samples)
- IT 220314-30-7P  
RL: ARG (Analytical reagent use); BPN (Biosynthetic preparation); PRP  
(Properties); THU (Therapeutic use); ANST (Analytical study); BIOL  
(Biological study); PREP (Preparation); USES (Uses)  
(amino acid sequence; high specificity homocysteine enzymic  
assays for biol. samples)
- IT 77-86-1, Tris buffer 7632-05-5, Sodium phosphate 11129-12-7, Borate  
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(buffer; high specificity homocysteine enzymic assays for  
biol. samples)
- IT 9023-64-7P, .gamma.-Glutamylcysteine synthetase  
RL: ARU (Analytical role, unclassified); BPN (Biosynthetic preparation);  
ANST (Analytical study); BIOL (Biological study); PREP (Preparation)  
(for reducing interference from cysteine; high specificity



- homocysteine enzymic assays for biol. samples)
- IT 7783-06-4, Hydrogen sulfide, analysis  
RL: ANT (Analyte); FMU (Formation, unclassified); ANST (Analytical study);  
FORM (Formation, nonpreparative)  
(high specificity homocysteine enzymic assays for biol. samples)
- IT 6027-13-0, L-Homocysteine  
RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); USES (Uses)  
(high specificity homocysteine enzymic assays for biol. samples)
- IT 60-24-2, .beta.-Mercaptoethanol 93-05-0 99-98-9 106-50-3D,  
p-Phenylene diamine, N,N-dialkyl derivs. 2836-02-4 3483-12-3,  
DL-Dithiothreitol 13746-66-2, Potassium ferricyanate 20074-52-6D,  
compsd., uses 51805-45-9, TCEP 105293-89-8  
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(high specificity homocysteine enzymic assays for biol. samples)
- IT 9024-41-3P, Homocysteinase  
RL: ARG (Analytical reagent use); BPN (Biosynthetic preparation); CAT (Catalyst use); PRP (Properties); PUR (Purification or recovery); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(high specificity homocysteine enzymic assays for biol. samples)
- IT 250285-33-7P  
RL: BPN (Biosynthetic preparation); PRP (Properties); BIOL (Biological study); PREP (Preparation)  
(nucleotide sequence; high specificity homocysteine enzymic assays for biol. samples)
- IT 250285-34-8 250289-27-1, 6: PN: US5985540 SEQID: 15 unclaimed DNA  
250289-42-0, 7: PN: US5985540 SEQID: 16 unclaimed DNA 250289-56-6, 8:  
PN: US5985540 SEQID: 17 unclaimed DNA 250289-70-4, 9: PN: US5985540  
SEQID: 18 unclaimed DNA 250289-80-6 250289-88-4 250290-12-1  
RL: PRP (Properties)  
(unclaimed nucleotide sequence; high specificity homocysteine enzymic assays for biol. samples)
- IT 204021-55-6  
RL: PRP (Properties)  
(unclaimed protein sequence; high specificity homocysteine enzymic assays for biol. samples)
- IT 78641-45-9 210887-98-2 220180-64-3 220180-65-4 220180-66-5  
220180-67-6 220180-68-7 250249-88-8  
RL: PRP (Properties)  
(unclaimed sequence; high specificity homocysteine enzymic assays for biol. samples)
- IT 52-90-4, L-Cysteine, analysis 63-68-3, Methionine, analysis  
RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
(without interference from; high specificity homocysteine enzymic assays for biol. samples)

RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD  
RE

- (1) Allen; US 4940658 1990 HCAPLUS
- (2) Allen; US 5438017 1995 HCAPLUS
- (3) Anon; WO 9315220 1993 HCAPLUS
- (4) Anon; WO 9807872 1998 HCAPLUS
- (5) Anon; WO 9814562 1998 HCAPLUS
- (6) Araki, A; Journal of Chromatography 1987, V422, P43 HCAPLUS
- (7) Bagnara, A; Molecular and Biochemical Parasitology 1996, V81, P1 HCAPLUS
- (8) Dudman, N; Clinical Chemistry 1996, V42(12), P2028 HCAPLUS
- (9) Esaki, N; Methods in Enzymology 1987, V143, P459 MEDLINE
- (10) Gage, D; Nature 1997, V387, P891 HCAPLUS
- (11) Garg, U; Clinical Chemistry 1997, V43(1), P141 HCAPLUS
- (12) Gilfix, B; Clinical Chemistry 1997, V43(4), P687 HCAPLUS
- (13) Sundrehagen; US 5631127 1997 HCAPLUS
- (14) Sundrehagen; US 5827645 1998 HCAPLUS
- (15) Tan; US 5985540 1999 HCAPLUS
- (16) van Atta; US 5478729 1995 HCAPLUS

L31 ANSWER 5 OF 6 HCAPLUS COPYRIGHT 2004 ACS on STN  
AN 1999:779171 HCAPLUS  
DN 132:20773  
ED Entered STN: 09 Dec 1999  
TI High specificity homocysteine assays for biological samples  
IN Tan, Yuying; Lenz, Martin  
PA Anticancer Inc., USA

SO U.S., 33 pp., Cont.-in-part of U.S. Ser. No. 61,337.

CODEN: USXXAM

DT Patent

LA English

IC ICM C12N009-86

ICS C12Q003-00; C07K001-00; C07H021-04

NCL 435232000

CC 9-2 (Biochemical Methods)

Section cross-reference(s): 14

FAN.CNT 9

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5998191	A	19991207	US 1998-122129	19980724 <--
	US 6140102	A	20001031	US 1997-974609	19971119 <--
	US 5985540	A	19991116	US 1998-61337	19980417 <--
	US 6066467	A	20000523	US 1999-340991	19990628 <--
	US 6468762	B1	20021022	US 2000-549098	20000412 <--
PRAI	US 1997-899776	B2	19970724	<--	
	US 1997-918214	B2	19970825	<--	
	US 1997-941921	A2	19971001	<--	
	US 1997-974609	A2	19971119	<--	
	US 1998-61337	A2	19980417	<--	
	US 1998-122129	A2	19980724	<--	
	US 1999-340991	A2	19990628	<--	

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 5998191	ICM	C12N009-86
	ICS	C12Q003-00; C07K001-00; C07H021-04
	NCL	435232000
US 6140102	ECLA	C12N009/02F; C12N009/10G; C12Q001/527; G01N033/68A2D2

AB Novel enzymic methods to determine the concentration of **homocysteine** in biol. fluids are described. In a typical embodiment of the invention, the biol. fluid sample is from a patient, and the methods of the invention are useful to assess risk for cardiovascular disease. The novel methods of the invention involve use of particular **homocysteinase** enzymes that permit the determination of **homocysteine** concns. in biol. samples without interference from the concns. of cysteine and/or of methionine that are routinely present in such samples. There is also provided a diagnostic kit for use in determining the amount of **homocysteine** in a biol. sample comprising (a) a **homocysteinase** having the aforementioned characteristics, and (b) at least one reagent capable of being used to determine the amount of product formed in the **homocysteinase** reaction. In a further aspect, the **homocysteinase** is provided as a chimeric mol. that comprises amino acid subsequences derived from, or patterned on, more than one **homocysteinase**, and which is typically produced from a chimeric polynucleotide that encodes therefor. Addnl. enhancements in **homocysteine** assay methodol. include use of the enzyme **gamma.-glutamylcysteine synthetase** to further limit any interference from cysteine present in the biol. samples.

ST **homocysteine** assay biol

IT Cardiovascular system

(disease; high specificity **homocysteine** assays for biol. samples)

IT Aeromonas

Body fluid

Buffers

Clostridium

Diagnosis

Disulfide group

Protein sequences

Pseudomonas

Pseudomonas putida

Standard substances, analytical

Test kits

Trichomonas

Trichomonas vaginalis

UV and visible spectroscopy

(high specificity **homocysteine** assays for biol. samples)

IT Reagents

RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)

(high specificity **homocysteine** assays for biol. samples)

IT Polynucleotides

RL: ARU (Analytical role, unclassified); BSU (Biological study,

unclassified); ANST (Analytical study); BIOL (Biological study)  
 (high specificity homocysteine assays for biol. samples)  
 IT 204021-55-6, Desulfhydrase, homocysteine (Trichomonas  
 vaginalis gene mgl-1)  
 RL: BOC (Biological occurrence); BSU (Biological study, unclassified); PRP  
 (Properties); BIOL (Biological study); OCCU (Occurrence)  
 (amino acid sequence; high specificity homocysteine assays  
 for biol. samples)  
 IT 7783-06-4, Hydrogen sulfide, analysis  
 RL: ANT (Analyte); ARU (Analytical role, unclassified); ANST (Analytical  
 study)  
 (high specificity homocysteine assays for biol. samples)  
 IT 6027-13-0, Homocysteine  
 RL: ANT (Analyte); THU (Therapeutic use); ANST (Analytical study); BIOL  
 (Biological study); USES (Uses)  
 (high specificity homocysteine assays for biol. samples)  
 IT 93-05-0 99-98-9 106-50-3D, -p-Phenylenediamine, N,N-dialkyl  
 2836-02-4 9024-41-3, Homocysteinase 13746-66-2,  
 Potassium ferricyanate 20074-52-6, Ferric ion, uses 105293-89-8  
 RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
 (high specificity homocysteine assays for biol. samples)  
 IT 52-90-4, Cysteine, analysis 63-68-3, Methionine, analysis 3483-12-3,  
 D,L-Dithiothreitol 9002-93-1, Triton x-100 9023-64-7,  
 .gamma.-Glutamylcysteine synthetase 11129-12-7, Borate  
 RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
 (high specificity homocysteine assays for biol. samples)  
 IT 78641-45-9 210887-98-2 220180-61-0, Ggnrlagge peptide+ 220180-62-1,  
 Rvckeahsq peptide+ 220180-63-2, Qmrmygsmi peptide+ 220180-64-3  
 220180-65-4 220180-66-5 220180-67-6 220180-68-7 250249-88-8  
 RL: BSU (Biological study, unclassified); BIOL (Biological study)  
 (high specificity homocysteine assays for biol. samples)  
 IT 250285-33-7 250285-34-8 250289-27-1, 6: PN: US5985540 SEQID: 15  
 unclaimed DNA 250289-42-0, 7: PN: US5985540 SEQID: 16 unclaimed DNA  
 250289-56-6, 8: PN: US5985540 SEQID: 17 unclaimed DNA 250289-70-4, 9:  
 PN: US5985540 SEQID: 18 unclaimed DNA 250289-80-6 250289-88-4  
 250290-12-1  
 RL: PRP (Properties)  
 (unclaimed nucleotide sequence; high specificity homocysteine  
 assays for biol. samples)

RE.CNT 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Allen; US 4940658 1990 HCAPLUS
- (2) Allen; US 5438017 1995 HCAPLUS
- (3) Anon; WO 9315220 1993 HCAPLUS
- (4) Anon; WO 9807872 1998 HCAPLUS
- (5) Anon; WO 9814562 1998 HCAPLUS
- (6) Araki, A; Journal of Chromatography 1987, V422, P43 HCAPLUS
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- (19) Lockwood, B; Biochemical Journal 1991, V279, P675 HCAPLUS
- (20) Markos, A; FEMS Microbiology Letters 1996, V135, P259 HCAPLUS
- (21) McCully, K; American Journal of Pathology 1969, V56, P111 MEDLINE
- (22) McCully, K; Annals of Clinical and Laboratory Science 1993, V23(6), P477  
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- (23) McCully, K; Annals of Clinical and Laboratory Science 1994, V24(2), P134  
HCAPLUS
- (24) McCully, K; Annals of Clinical and Laboratory Science 1994, V24(1), P27  
HCAPLUS
- (25) McCully, K; Nature Medicine 1996, V2(4), P386 HCAPLUS
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HCAPLUS
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- (28) Sundrehagen; US 5827645 1998 HCAPLUS
- (29) Tanaka, H; Journal of Applied Biochemistry 1980, V2, P439 HCAPLUS
- (30) Van Atta; US 5478729 1995 HCAPLUS
- (31) Watanabe, K; Nucleic Acids Research 1986, V14(11), P4393 HCAPLUS

Searched by Noble Jarrell

L31 ANSWER 6 OF 6 HCAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1999:96390 HCAPLUS  
 DN 130:165151  
 ED Entered STN: 12 Feb 1999  
 TI High specificity homocysteine assays for biological samples  
 using homocysteinase  
 IN Tan, Yuying; Lenz, Martin; Perry, Andrew W.; Hoffman, Robert M.  
 PA Anticancer, Inc., USA  
 SO PCT Int. Appl., 109 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 IC ICM C12Q001-25  
 ICS C12Q001-68  
 CC 9-2 (Biochemical Methods)  
 Section cross-reference(s): 3, 6, 7, 10, 14, 34

FAN.CNT 9

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9905311	A1	19990204	WO 1998-US15430	19980724 <--
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 6140102	A	20001031	US 1997-974609	19971119 <--
US 5985540	A	19991116	US 1998-61337	19980417 <--
AU 9885127	A1	19990216	AU 1998-85127	19980724 <--
AU 758729	B2	20030327		
EP 1000170	A1	20000517	EP 1998-935998	19980724 <--
R: BE, CH, DE, FR, GB, LI				
JP 2000513589	T2	20001017	JP 1999-510146	19980724 <--
JP 3337693	B2	20021021		
PRAI US 1997-899776	A	19970724 <--		
US 1997-918214	A	19970825 <--		
US 1997-941921	A	19971001 <--		
US 1997-974609	A	19971119 <--		
US 1998-61337	A2	19980417 <--		
WO 1998-US15430	W	19980724 <--		

## CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 9905311	ICM	C12Q001-25
	ICS	C12Q001-68
US 6140102	ECLA	C12N009/02F; C12N009/10G; C12Q001/527; G01N033/68A2D2

AB The novel methods of the invention involve use of particular homocysteinase enzymes that permit the determination of homocysteine concns. in biol. samples without interference from the concns. of cysteine and/or of methionine that are routinely present in such samples. There is also provided a diagnostic kit for use in determining the amount of homocysteine in a biol. sample comprising (a) a homocysteinase having the aforementioned characteristics, and (b) at least one reagent capable of being used to determine the amount of product formed in the homocysteinase reaction. In a further aspect, the homocysteinase is provided as a chimeric mol. that comprises amino acid subsequences derived from, or patterned on, more than one homocysteinase, and which is typically produced from a chimeric polynucleotide that encodes therefor. Addnl. enhancements in homocysteine assay methodol. include use of the enzyme .gamma.-glutamylcysteine synthetase to further limit any interference from cysteine present in the biol. samples. This assay may be applied to the diagnosis of cardiovascular diseases.

ST homocysteine detn homocysteinase DNA sequence  
 Trichomonas; cardiovascular disease diagnosis homocysteine detn homocysteinase

IT Cardiovascular system  
 (disease; high specificity homocysteine assays for biol. samples using homocysteinase)

IT Animal tissue  
 (fluid; high specificity homocysteine assays for biol. samples using homocysteinase)

- IT Aeromonas
  - Blood
  - Blood analysis
    - Blood plasma
    - Blood serum
    - Body fluid
  - Clostridium
  - DNA sequences
  - Diagnosis
  - Disulfide group
  - Enzyme functional sites
  - Escherichia coli
  - Eukaryote (Eukaryotae)
  - Prokaryote
  - Protein sequences
  - Pseudomonas
  - Pseudomonas putida
  - Reducing agents
    - Test kits
  - Trichomonas
  - Trichomonas vaginalis
  - Urine
    - Urine analysis
      - (high specificity homocysteine assays for biol. samples using homocysteinase)
- IT Amino acids, biological studies
  - RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)
  - (high specificity homocysteine assays for biol. samples using homocysteinase)
- IT DNA
  - RL: BSU (Biological study, unclassified); BUU (Biological use, unclassified); PRP (Properties); BIOL (Biological study); USES (Uses)
  - (high specificity homocysteine assays for biol. samples using homocysteinase)
- IT Fusion proteins (chimeric proteins)
  - RL: ARU (Analytical role, unclassified); BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); BUU (Biological use, unclassified); PRP (Properties); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)
  - (homocysteinase; high specificity homocysteine assays for biol. samples using homocysteinase)
- IT Gene, microbial
  - RL: ARU (Analytical role, unclassified); BUU (Biological use, unclassified); PRP (Properties); ANST (Analytical study); BIOL (Biological study); USES (Uses)
  - (mg11; high specificity homocysteine assays for biol. samples using homocysteinase)
- IT Gene, microbial
  - RL: ARU (Analytical role, unclassified); BUU (Biological use, unclassified); PRP (Properties); ANST (Analytical study); BIOL (Biological study); USES (Uses)
  - (mg12; high specificity homocysteine assays for biol. samples using homocysteinase)
- IT 204021-55-6, Desulphydrase, homocysteine (Trichomonas vaginalis gene mg11) 220314-30-7 220314-31-8
  - RL: ARU (Analytical role, unclassified); BUU (Biological use, unclassified); PRP (Properties); ANST (Analytical study); BIOL (Biological study); USES (Uses)
  - (amino acid sequence; high specificity homocysteine assays for biol. samples using homocysteinase)
- IT 10043-35-3, Boric acid (H3BO3), analysis
  - RL: ARU (Analytical role, unclassified); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
  - (buffer; high specificity homocysteine assays for biol. samples using homocysteinase)
- IT 127-17-3, Pyruvic acid, analysis 600-18-0, .alpha.-Ketobutyric acid
  - RL: ANT (Analyte); ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process)
  - (high specificity homocysteine assays for biol. samples using homocysteinase)
- IT 7664-41-7, Ammonia, analysis 7783-06-4, Hydrogen sulfide, analysis
  - RL: ANT (Analyte); BPR (Biological process); BSU (Biological study,

- unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process)  
(high specificity homocysteine assays for biol. samples using homocysteinase)
- IT 6027-13-0, L-Homocysteine  
RL: ANT (Analyte); BPR (Biological process); BSU (Biological study, unclassified); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)  
(high specificity homocysteine assays for biol. samples using homocysteinase)
- IT 9023-64-7, .gamma.-Glutamylcysteine synthetase 9023-99-8, Cystathionine .beta.-synthetase 37256-59-0, Cysteine oxidase 37318-56-2, Cysteine tRNA synthetase  
RL: ARG (Analytical reagent use); ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)  
(high specificity homocysteine assays for biol. samples using homocysteinase)
- IT 9024-41-3, Homocysteinase  
RL: ARG (Analytical reagent use); ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); ANST (Analytical study); BIOL (Biological study); PROC (Process); USES (Uses)  
(high specificity homocysteine assays for biol. samples using homocysteinase)
- IT 9001-60-9, Lactate dehydrogenase 9025-54-1, S-Adenosylhomocysteine hydrolyase 9082-71-7, Leucine dehydrogenase  
RL: ARU (Analytical role, unclassified); BAC (Biological activity or effector, except adverse); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process)  
(high specificity homocysteine assays for biol. samples using homocysteinase)
- IT 63-68-3, L-Methionine, analysis  
RL: ARU (Analytical role, unclassified); BOC (Biological occurrence); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); OCCU (Occurrence); PROC (Process)  
(high specificity homocysteine assays for biol. samples using homocysteinase)
- IT 52-90-4, L-Cysteine, analysis  
RL: ARU (Analytical role, unclassified); BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process)  
(high specificity homocysteine assays for biol. samples using homocysteinase)
- IT 93-05-0, N,N-Diethyl-p-phenylenediamine 99-98-9, N,N-Dimethyl-p-phenylenediamine 106-50-3D, p-Phenylenediamine, dialkyl derivative 2836-02-4, N,N-Dibutyl-p-phenylenediamine 7439-89-6, Iron, analysis 13746-66-2, Potassium ferricyanate 20074-52-6, Ferric cation, analysis 105293-89-8, N,N-Dipropyl-p-phenylenediamine  
RL: ARU (Analytical role, unclassified); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)  
(high specificity homocysteine assays for biol. samples using homocysteinase)
- IT 60-24-2 3483-12-3, DL-Dithiothreitol 5961-85-3, Tris-(2-carboxyethyl)phosphine  
RL: ARU (Analytical role, unclassified); BUU (Biological use, unclassified); RCT (Reactant); ANST (Analytical study); BIOL (Biological study); RACT (Reactant or reagent); USES (Uses)  
(high specificity homocysteine assays for biol. samples using homocysteinase)
- IT 56-40-6, Glycine, biological studies 56-41-7, L-Alanine, biological studies 56-45-1, L-Serine, biological studies 56-84-8, L-Aspartic acid, biological studies 56-85-9, L-Glutamine, biological studies 56-86-0, L-Glutamic acid, biological studies 60-18-4, L-Tyrosine, biological studies 61-90-5, L-Leucine, biological studies 63-91-2, L-Phenylalanine, biological studies 70-47-3, L-Asparagine, biological studies 72-18-4, L-Valine, biological studies 72-19-5, L-Threonine, biological studies 73-22-3, L-Tryptophan, biological studies 73-32-5, L-Isoleucine, biological studies  
RL: BOC (Biological occurrence); BSU (Biological study, unclassified); BIOL (Biological study); OCCU (Occurrence)  
(high specificity homocysteine assays for biol. samples using homocysteinase)

IT 78641-45-9 210887-98-2 220180-61-0 220180-62-1 220180-63-2  
220180-64-3 220180-65-4 220180-66-5 220180-67-6 220180-68-7  
RL: BSU (Biological study, unclassified); BUU (Biological use,  
unclassified); PRP (Properties); BIOL (Biological study); USES (Uses)  
(high specificity homocysteine assays for biol. samples using  
homocysteinase)

IT 220314-32-9  
RL: BSU (Biological study, unclassified); BUU (Biological use,  
unclassified); PRP (Properties); BIOL (Biological study); USES (Uses)  
(nucleotide sequence; high specificity homocysteine assays  
for biol. samples using homocysteinase)

IT 220314-33-0  
RL: BUU (Biological use, unclassified); PRP (Properties); BIOL (Biological  
study); USES (Uses)  
(nucleotide sequence; high specificity homocysteine assays  
for biol. samples using homocysteinase)

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

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- (2) Hart, D; WO 9814562 A 1998 HCAPLUS
- (3) Hoffman, R; 2nd International Conference on Homocysteine Metabolism  
Nijmegen Netherlands Netherlands Journal of Medicine 1998, V52(Suppl), PS41
- (4) Robinson, K; Cleveland Clinic Journal of Medicine 1994, V61(6), P438  
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- (5) Sundrehagen, E; US 5827645 A 1998 HCAPLUS
- (6) van Atta, R; US 5478729 A 1995 HCAPLUS

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